

Remarks

Claims 1-23 are pending, with claim 1 being independent. Claim 1 has been amended to even more clearly recite and distinctly claim the present invention. Support for the amendment can be found throughout the specification; therefore, no new matter has been added.

Applicants respectfully request the Examiner to withdraw the outstanding rejections in view of the foregoing amendments and the following remarks.

Claim Rejections under 35 U.S.C. § 103(a)

Claims 1, 9, 14, 15, 17, and 21 are rejected under 35 U.S.C. 103(a) as allegedly being unpatentable over Tadashi (JP No. 2002-298919) in view of Goa (US 5,972,055). Applicants respectfully disagree with this rejection; therefore, this rejection is traversed.

The present invention relates to a process for preparing an electrochemical device composed of a polyether/lithium salt electrolyte film between two films respectively constituting the positive electrode and the negative electrode. The process comprises assembling a multilayer structure comprising a current-collecting support, a film intended to form the positive electrode, a polyether film intended to form the electrolyte and a film intended to form the negative electrode, wherein:

- the film intended to form the positive electrode and/or the film intended to form the negative electrode are composed of a composite material comprising the lithium salt;
- the polyether film intended to form the electrolyte is *prepared by extrusion* and *is not impregnated with lithium salt before assembly of the electrochemical device*;
- the assembled device is left at rest for a time sufficient to allow the *lithium salt* present in the material of the positive electrode and/or in the material of the negative electrode *to diffuse into the polymer film*.

As provided in the specification, electrochemical systems for energy storage, for example batteries or supercapacitors which operate with high cell voltages, require electrolytes which have a broad stability range. These electrolytes are obtained by dissolution of one or more ionic compounds in a polar liquid solvent, a solvating polymer, or mixtures thereof.

Also as provided, electrochemical systems in which the electrolyte comprises lithium salt and a polymer solvent of the polyether type are particularly advantageous. Such systems, which operate by circulation of lithium ions through an electrolyte between an anode and a cathode, can be composed of two electrodes in the form of films between which is the electrolyte, also in the film form. The multilayer assembly thus formed is rolled up.

However, the preparation of such a device presents problems.

First, the lithium salts are hygroscopic and the preparation of the polyether material/lithium salt has to be carried out in an anhydrous atmosphere. Second and quite important, a polyether is a weakly crystalline polymer, which when blended with a lithium salt, forms a complex constituting a *sticky material*. For this reason, it is *quite difficult* to prepare a polyether material/lithium salt film *by extrusion*. To overcome this disadvantage, typically backing films have been used to prevent the polyether/lithium salt film from sticking to itself. However, when it is desired to remove the backing film, the strong adhesion between the backing film and the electrolytic film causes splits that render the electrolyte unusable.

According to the present invention, a polyether film, *which is not impregnated with lithium salt before assembly of the electrochemical device*, can be prepared by the conventional method of *extrusion*. This film can be protected by a backing film before its final use, and it is possible to detach the backing film from the polyether film without damage because of the low adhesion between the polyether and the backing film in the absence of lithium salts. The polyether film is then inserted between the anode and cathode films, at least one of which comprises lithium salt. The lithium salt present in the material of the anode and/or cathode diffuses into the polyether film (the electrolyte).

Importantly, the polyether film is not impregnated with lithium salt before assembly of the electrochemical device. Moreover, because the lithium salt diffuses into the polyether film from the material of the anode and/or cathode, there is *no additional step* of adding an electrolyte solution comprising lithium salt after assembling the elements of the electrochemical device.

In contrast, Tadashi discloses a nonaqueous electrolyte battery, which can prevent the fall of the charge-and-discharge capacity by excess voltage arising in the charge and discharge in a high current. The battery of Tadashi comprises a cathode and an anode which are separated from each other by a separator. The cathode and the anode comprise an active

electrode material and a *gel-like polymer* containing a lithium salt (designated by “non-aqueous electrolyte”). The separator between the cathode and the anode is impregnated with such a non-aqueous electrolyte.

At the time of assembly of the battery of Tadashi, the concentration of lithium salt in the non-aqueous electrolyte, which is contained in the anode and cathode, is higher than in the non-aqueous electrolyte that is impregnated in the separator. However, *the separator of Tadashi is impregnated* with a non-aqueous electrolyte containing lithium salt.

In contrast, as described above, the presently claimed process prepares an electrochemical device composed of a polyether/lithium salt electrolyte film. As such, the electrolyte is a polymer electrolyte, which is a film of a material consisting of a salt dissolved in a polyether (which is a solvating polymer). The present process comprises assembling a film intended to form the positive electrode, a polyether film intended to form the electrolyte, and a film intended to form the negative electrode. Initially, *only one or both of the films intended to form the electrodes contain a lithium salt*. Lithium diffuses into the polyether film forming the electrolyte upon contact between the polyether film and the films forming the electrodes. As such, the element forming the electrolyte in the electrochemical cell of the present invention is a *solid solution* of a salt in a polymer.

This polyether film is formed *by extrusion* and *is not impregnated with lithium salt before assembly of the electrochemical device*. Accordingly, the polyether film of the present invention is a *solid polyether film*. It is significantly different than a *gel-like polymer separator* impregnated by a liquid or a polymer electrolyte, as disclosed in Tadashi. Accordingly, the presently claimed polyether film differs physically (solid film vs gel-like polymer). In addition, in contrast to Tadashi, the polyether film of the present invention has solvating properties with regard to lithium salts so that the salts can diffuse into the polyether after the electrochemical cell has been assembled.

Applicants note that Tadashi discloses a *polyolefin polymer* for the gel-like polymer separator (paragraph [0014], [0025] and as noted in Office Action page 2 and 4). It is well known to those of skill in the art that polyolefin polymers are significantly different than the presently claimed *Polyether polymers*. Polyolefins (polyalkenes) are a polymer produced from simple olefin (alkene) monomers. For example, polyethylene is a polyolefin produced by polymerizing the olefin (alkene) ethylene and polypropylene is a polyolefin produced by polymerizing the olefin (alkene) propylene. In contrast, polyethers are polymers containing

more than one ether group (-CH₂-O-CH₂) and thus contain oxygen atoms. For example, polyethers are polymers like polyethylene glycol and polypropylene glycol. Polyolefins do not contain any oxygen atoms and thus cannot contain any ether bonds.

Not only are polyolefins and polyether structurally different, these polymers also exhibit significantly different properties. In contrast to the presently claimed polyether film, polyolefins are not solvating for lithium salts. Accordingly, lithium salts can not diffuse in a polyolefin separator by a solvating process as in the presently claimed method.

Moreover, the separator of Tadashi is not prepared by extrusion. Because the separator in Tadashi is ***not prepared by extrusion***, there is no problem with the sticky character of the material intended to form the electrolyte.

Gao relates to a method of providing a binary electrolyte-solvent solution in a solid batter system. Gao states that it particularly relates to a binary solvent system for electrochemical cells having lamiated electrode components, which obviates the need for an extraction or displacement of plasticizer in the formation of the battery. (Col. 1, lines 7-11). Gao explains that it has been discovered that a dual-purpose plasticizer/electroylte can be used, negating the need for plasticizer removal. (Col. 2, lines 62-64).

According to the method of Gao, the plasticizer function sas a plasticizer during formation of the electrolytic cell precursor, and acts as an electrolyte solvent upon activation of the batter (Col. 2, lines 60-67). A second solvent carries the electrolyte salt to activate the electrolyte cell.

The method of Gao comprises first assembling the different elements of the electrochemical cell (anode, cathode, and interposed functionally between, an ion-conducting electrolyte separator) to obtain an electrochemical cell precursor. The cell precursor is activated when an inorganic salt and an electrolyte solvent are placed within the porous portions of the cell precursor. (Col 4, lines 21-29).

Therefore, according to the method of Gao, ***none*** of the different elements of the cell (anode, cathod, and separator) contain a lithium salt ***before*** assembling the cell. Gao requires a ***separate*** impregnation step ***after*** the assembly of the components of the electrochemical cell. Applicants note that this separate, additional impregnation step is avoided according to the present invention because the lithium salt diffuses into the polyether film from the anode and/or cathode materials.

Gao discloses that the separator may be made of glass fiber, porous polypropylene or porous polyethylene. (Col. 4, lines 65-67). Gao further discloses that the solid polymeric matrix separator has a porous structure, permeated with a plasticizer, upon curing or preferably casting. (Col. 5, lines 1-7). Gao does not disclose or suggest the presently claimed polyether film prepared by extrusion.

Therefore, even if combined Tadashi and Gao do not disclose or suggest the presently claimed process for the preparation of an electrochemical device composed of a polyether/lithium salt electrolyte film between two films respectively constituting the positive electrode and the negative electrode. Even if combined, Tadashi and Gao do not disclose or suggest using a polyether film prepared by extrusion for the electrolyte separator, wherein the polyether film is not impregnated with lithium salt before assembly of the electrochemical device and after assembly, lithium salt in the cathode and/or anode materials diffuse into the polyether film.

Accordingly, even if combined, Tadashi and Gao do not disclose or suggest assembling a multilayer structure comprising a current-collecting support, a film intended to form the positive electrode, a polyether film intended to form the electrolyte and a film intended to form the negative electrode, wherein the film intended to form the positive electrode and/or the film intended to form the negative electrode are composed of a composite material comprising the lithium salt; the polyether film intended to form the electrolyte is prepared by extrusion and is not impregnated with lithium salt before assembly of the electrochemical device, and the assembled device is left at rest for a time sufficient to allow the lithium salt present in the material of the positive electrode and/or in the material of the negative electrode to diffuse into the polymer film.

For at least the above noted reasons, Applicants respectfully submit that claims 1, 9, 14, 15, 17, and 21 are not obvious over Tadashi in view of Gao and Applicants respectfully request withdrawal of this rejection.

Claims 1, 9, 14, 15, 17, and 21 are rejected under 35 U.S.C. 103(a) as allegedly being unpatentable over Tadashi in view of Gozdz (US 5,552,239) and Yu (US 2003/01365000). Applicants respectfully disagree with this rejection; therefore, this rejection is traversed.

As described above, the battery of Tadashi comprises a cathode and an anode which are separated from each other by a *gel-like polymer* separator containing a lithium salt

separator. At the time of assembly of the battery of Tadashi, the concentration of lithium salt in the non-aqueous electrolyte, which is contained in the anode and cathode, is higher than in the non-aqueous electrolyte that is impregnated in the separator. However, *the separator of Tadashi is impregnated* with a non-aqueous electrolyte containing lithium salt.

In contrast, as described above, in the presently claimed process initially, *only one or both of the films intended to form the electrodes (cathode and anode) contain a lithium salt*. Lithium diffuses into the polyether film forming the electrolyte upon contact between the polyether film and the films forming the electrodes. As such, the element forming the electrolyte in the electrochemical cell of the present invention is a *solid solution* of a salt in a polymer.

This polyether film is formed by *extrusion* and is *not impregnated with lithium salt before assembly of the electrochemical device*. Accordingly, the polyether film of the present invention is a *solid polyether film*. It is significantly different than a *gel-like polymer separator* impregnated by a liquid or a polymer electrolyte, as disclosed in Tadashi.

Accordingly, the presently claimed polyether film differs physically (solid film vs gel-like polymer). In addition, in contrast to Tadashi, the polyether film of the present invention has solvating properties with regard to lithium salts so that the salts can diffuse into the polyether after the electrochemical cell has been assembled.

Applicants note that Tadashi discloses a *polyolefin polymer* for the gel-like polymer separator (paragraph [0014], [0025] and as noted in Office Action page 2 and 4). As explained above, polyolefin polymers are significantly different than the presently claimed *polyether polymers*. Polyolefins (polyalkenes) are a polymer produced from simple olefin (alkene) monomers and polyethers are polymers containing more than one ether group (-CH₂-O-CH₂) and thus contain oxygen atoms. Polyolefins do not contain any oxygen atoms and thus cannot contain any ether bonds. Not only are polyolefins and polyether structurally different, these polymers also exhibit significantly different properties. In contrast to the presently claimed polyether film, polyolefins are not solvating for lithium salts. Accordingly, lithium salts can not diffuse in a polyolefin separator by a solvating process as in the presently claimed method.

Moreover, the separator of Tadashi is not prepared by extrusion. Because the separator in Tadashi is *not prepared by extrusion*, there is no problem with the sticky character of the material intended to form the electrolyte.

Applicants note that in stating this rejection, the Examiner cites to *Gozdz*. In discussing the rejection on page 5, the Examiner cites to *Gao* (“Gao teaches a similar process for making a battery wherein the separator/electrolyte element is formulated without a lithium salt component.”), and the Examiner makes no mention of *Gozdz* in discussing this rejection. Therefore, Applicants do not know whether to distinguish the combination of Tadashi, Gao and Yu or the combination of Tadashi, *Gozdz* and Yu. Applicants request clarification should a subsequent action issue rather than an Allowance.

Applicants have explained in detail above how the combination of Tadashi and Gao do not disclose or suggest the presently claimed process.

With regard to *Gozdz*, *Gozdz* relates to a laminate compact rechargeable battery in which a separator/electrolyte is disposed between the electrodes. In *Gozdz* the different layers forming the battery are assembled together either by coating or by lamination. The separator/electrolyte is prepared by coating of a fluid composition on a solid support. (Col. 6, lines 41-52). According to the process of *Gozdz*, after assembly of the battery, it is compulsory to perform, first a step of impregnation of the cell with a lithium ion solution in order to introduce the lithium salt into the separator/electrolyte.

This step of impregnation with a lithium ion solution is significantly different from the phenomenon occurring in the presently claimed process in which lithium ions *diffuse* from one or both of the electrode materials into the polyether film because the polyether is a solvating polymer for the lithium ions. As such, in the present invention the lithium salt in the electrolyte is provided by one or both of the electrode compositions, without using any additional composition or solvent containing lithium salt as required in *Gozdz*. *Gozdz* does not disclose or suggest the *lithium ions diffusing from the electrode materials into the polyether film*.

Moreover, *Gozdz* discloses active electrolytic components of the electrodes containing a lithium-ion intercalation material, such as a lithium metal oxide. (Col. 3, lines 9-19). These salts are active electrode materials and thus are suitable for the anode and cathode. However, they are not a lithium salt usable as an electrolyte. Accordingly, the lithium salts in the electrodes of *Gozdz* are distinguishable from the lithium salts in the electrolyte. In contrast, as described above in the present process, the lithium ions diffuse from one or both of the electrode materials into the polyether film of the electrolyte. Thus, the lithium salts in all are the same.

Yu relates to a continuous method of making dry-stretch microporous membrane battery separators from polypropylene or polyethylene (both polyolefins not polyethers) by an extrusion process. As explained in detail above, polypropylene and polyethylene are polyolefins and polyolefins are significantly different both in structure and function than the presently claimed polyethers.

Therefore, even if combined Tadashi, Gozdz (or Gao) and Yu do not disclose or suggest the presently claimed process for the preparation of an electrochemical device composed of a polyether/lithium salt electrolyte film between two films respectively constituting the positive electrode and the negative electrode. Even if combined, Tadashi, Gozdz (or Gao) and Yu do not disclose or suggest using a polyether film prepared by extrusion for the electrolyte separator, wherein the polyether film is not impregnated with lithium salt before assembly of the electrochemical device and after assembly, lithium salt in the cathode and/or anode materials diffuse into the polyether film.

Accordingly, even if combined, Tadashi, Gozdz (or Gao) and Yu do not disclose or suggest assembling a multilayer structure comprising a current-collecting support, a film intended to form the positive electrode, a polyether film intended to form the electrolyte and a film intended to form the negative electrode, wherein the film intended to form the positive electrode and/or the film intended to form the negative electrode are composed of a composite material comprising the lithium salt; the polyether film intended to form the electrolyte is prepared by extrusion and is not impregnated with lithium salt before assembly of the electrochemical device, and the assembled device is left at rest for a time sufficient to allow the lithium salt present in the material of the positive electrode and/or in the material of the negative electrode to diffuse into the polymer film.

For at least the above noted reasons, Applicants respectfully submit that claims 1, 9, 14, 15, 17, and 21 are not obvious over Tadashi in view of Gozdz (or Gao) and Yu and Applicants respectfully request withdrawal of this rejection.

Claims 10, 12, 16, 20, and 22 are rejected under 35 U.S.C. 103(a) as allegedly being unpatentable over Tadashi in view of Yu or Gao and further in view of Gozdz. Applicants respectfully disagree with this rejection; therefore, this rejection is traversed.

As explained in detail above, the combination of Tadashi, Gozdz (or Gao) and Yu do not disclose or suggest the presently claimed process for the preparation of an

electrochemical device composed of a polyether/lithium salt electrolyte film between two films respectively constituting the positive electrode and the negative electrode.

Accordingly, even if combined, Tadashi, Yu or Gao and Gozdz do not disclose or suggest the presently claimed process. The combination does not disclose or suggest using a polyether film prepared by extrusion for the electrolyte separator, wherein the polyether film is not impregnated with lithium salt before assembly of the electrochemical device and after assembly, lithium salt in the cathode and/or anode materials diffuse into the polyether film.

Accordingly, even if combined, Tadashi, Yu or Gao and Gozdz do not disclose or suggest assembling a multilayer structure comprising a current-collecting support, a film intended to form the positive electrode, a polyether film intended to form the electrolyte and a film intended to form the negative electrode, wherein the film intended to form the positive electrode and/or the film intended to form the negative electrode are composed of a composite material comprising the lithium salt; the polyether film intended to form the electrolyte is prepared by extrusion and is not impregnated with lithium salt before assembly of the electrochemical device, and the assembled device is left at rest for a time sufficient to allow the lithium salt present in the material of the positive electrode and/or in the material of the negative electrode to diffuse into the polymer film.

For at least the above noted reasons, Applicants respectfully submit that claims 10, 12, 16, 20, and 22 are not obvious over Tadashi in view of Gozdz (or Gao) and Yu and Applicants respectfully request withdrawal of this rejection.

Claim 2 is rejected under 35 U.S.C. 103(a) as allegedly being unpatentable over Tadashi in view of Yu or Gao and further in view of Hayase (US 2002/298919). Applicants respectfully disagree with this rejection; therefore, this rejection is traversed.

Hayase relates to a chemical battery comprising a positive electrode, a negative electrode, and a gel electrolyte containing a crosslinked body and an electrolyte. The gel electrolyte is obtained from a gel electrolyte precursor. Hayase is cited merely for disclosing the thickness of the electrodes and electrolyte.

In the process of Hayase, the gel electrolyte used is obtained by a reticulation process from a gel electrolyte precursor containing a gelling agent (epoxy type polymer) and an electrolyte comprising a nonaqueous solvent and a lithium salt dissolved in the nonaqueous solvent. Accordingly, in Hayase the lithium salts are introduced in the electrolyte intended to

separate the two electrodes during the preparation of the electrolyte layer, i.e., before the reticulation of the gelling agent, and therefore, before assembly of the battery.

As described in detail above, Tadashi and Gao or Yu do not disclose or suggest the presently claimed process for the preparation of an electrochemical device composed of a polyether/lithium salt electrolyte film between two films respectively constituting the positive electrode and the negative electrode. Even if combined, Tadashi and Gao or Yu does not disclose or suggest using a polyether film prepared by extrusion for the electrolyte separator, wherein the polyether film is not impregnated with lithium salt before assembly of the electrochemical device and after assembly, lithium salt in the cathode and/or anode materials diffuse into the polyether film.

Even if combined, Tadashi, Gao or Yu do not disclose or suggest assembling a multilayer structure comprising a current-collecting support, a film intended to form the positive electrode, a polyether film intended to form the electrolyte and a film intended to form the negative electrode, wherein the film intended to form the positive electrode and/or the film intended to form the negative electrode are composed of a composite material comprising the lithium salt; the polyether film intended to form the electrolyte is prepared by extrusion and is not impregnated with lithium salt before assembly of the electrochemical device, and the assembled device is left at rest for a time sufficient to allow the lithium salt present in the material of the positive electrode and/or in the material of the negative electrode to diffuse into the polymer film.

Hayase as cited, and in its full disclosure, does not cure the many above-noted deficiencies in Tadashi and Gao or Yu. Accordingly, even if combined, Tadashi and Gao or Yu in view of Hayase do not disclose or suggest the presently claimed process.

Therefore, for at least the above noted reasons, Applicants respectfully request withdrawal of this rejection.

Claims 3-8, 19, and 23 are rejected under 35 U.S.C. 103(a) as allegedly being unpatentable over Tadashi in view of Yu or Gao and further in view of Harvey (US 2004/0024174). Applicants respectfully disagree with this rejection; therefore, this rejection is traversed.

Harvey discloses a copolymer of ethylene oxide and at least one substituted oxirane carrying a cross-linkable function. Harvey is cited for disclosing copolymers obtained from

ethylene oxide and from at least one substituted oxirane and which comprise at least 70% of CH₂-CH₂-O- repeat units derived from ethylene oxide.

In Harvey, the disclosed copolymer is useful for preparing solid electrolyte for batteries. Harvey discloses that when this copolymer is used to prepare an ionically conductive material (an electrolyte), it is associated with an ionic compound. The ionic compound, which can be a lithium salt, is introduced into the copolymer before the cross-linking or into the cross-linked polymer. (paragraph [0042]). In Harvey, the ionic compound can be incorporated into the copolymer by immersing the copolymer into a solution of the selected ionic compound and this ionically conductive material can thereafter be used as a solid polymer electrolyte to separate electrodes.

Therefore, according to Harvey the lithium ions are introduced into the electrolyte *before* the assembly of the battery. Moreover, in Harvey the ionically conductive material is poured onto a support after dissolution of the copolymer in a solvent and fried to evaporate the solvent and form a film (examples 4 and 6). Accordingly, the ionically conductive material is not prepared by extrusion.

As described in detail above, Tadashi and Gao or Yu do not disclose or suggest the presently claimed process for the preparation of an electrochemical device composed of a polyether/lithium salt electrolyte film between two films respectively constituting the positive electrode and the negative electrode. Even if combined, Tadashi and Gao or Yu does not disclose or suggest using a polyether film prepared by extrusion for the electrolyte separator, wherein the polyether film is not impregnated with lithium salt before assembly of the electrochemical device and after assembly, lithium salt in the cathode and/or anode materials diffuse into the polyether film.

Even if combined, Tadashi, Gao or Yu do not disclose or suggest assembling a multilayer structure comprising a current-collecting support, a film intended to form the positive electrode, a polyether film intended to form the electrolyte and a film intended to form the negative electrode, wherein the film intended to form the positive electrode and/or the film intended to form the negative electrode are composed of a composite material comprising the lithium salt; the polyether film intended to form the electrolyte is prepared by extrusion and is not impregnated with lithium salt before assembly of the electrochemical device, and the assembled device is left at rest for a time sufficient to allow the lithium salt

present in the material of the positive electrode and/or in the material of the negative electrode to diffuse into the polymer film.

Harvey as cited, and in its full disclosure, does not cure the many above-noted deficiencies in Tadashi and Gao or Yu. Accordingly, even if combined, Tadashi, Gao or Yu in view of Harvey do not disclose or suggest the presently claimed process.

Therefore, for at least the above noted reasons, Applicants respectfully request withdrawal of this rejection.

Claim 11 is rejected under 35 U.S.C. 103(a) as allegedly being unpatentable over Tadashi in view of Yu or Gao and further in view of Benson (US 2004/0023106). Applicants respectfully disagree with this rejection; therefore, this rejection is traversed.

Benson relates to an apparatus for use as an electrochemical device. The apparatus may be of particular use in the manufacture of thin-film, lightweight, flexible or conformable, electrochemical devices such as batteries and arrays of such devices. (paragraph [0003]). Benson is cited merely as disclosing that the film constituting the negative electrode is composed of lithium (i.e., as disclosing a lithium anode).

Benson relates to multi layer electrolyte systems, for example solid-state lithium batteries, including one or more inter-layers of lithium ion conducting materials interposed between two or more amorphous electrolyte layers. Benson discloses that such a multi-layer electrolyte system may prevent leakage and failure of thin-film batteries. Benson also does not disclose or suggest extrusion among the different techniques used to manufacture this multi-layer electrolyte system.

As described in detail above, Tadashi and Gao or Yu do not disclose or suggest the presently claimed process for the preparation of an electrochemical device composed of a polyether/lithium salt electrolyte film between two films respectively constituting the positive electrode and the negative electrode. Even if combined, Tadashi and Gao or Yu does not disclose or suggest using a polyether film prepared by extrusion for the electrolyte separator, wherein the polyether film is not impregnated with lithium salt before assembly of the electrochemical device and after assembly, lithium salt in the cathode and/or anode materials diffuse into the polyether film.

Even if combined, Tadashi, Gao or Yu do not disclose or suggest assembling a multilayer structure comprising a current-collecting support, a film intended to form the

positive electrode, a polyether film intended to form the electrolyte and a film intended to form the negative electrode, wherein the film intended to form the positive electrode and/or the film intended to form the negative electrode are composed of a composite material comprising the lithium salt; the polyether film intended to form the electrolyte is prepared by extrusion and is not impregnated with lithium salt before assembly of the electrochemical device, and the assembled device is left at rest for a time sufficient to allow the lithium salt present in the material of the positive electrode and/or in the material of the negative electrode to diffuse into the polymer film.

Benson as cited, and in its full disclosure, does not cure the many above-noted deficiencies in Tadashi and Gao or Yu. Accordingly, even if combined, Tadashi and Gao or Yu in view of Benson do not disclose or suggest the presently claimed process.

Therefore, for at least the above noted reasons, Applicants respectfully request withdrawal of this rejection.

Conclusion

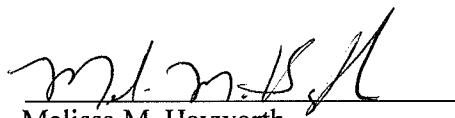
For at least the reasons noted above, the art of record does not disclose or suggest the inventive concept of the present claims.

In view of the foregoing amendments and remarks, reconsideration of the claims and allowance of the subject application is earnestly solicited. In the event that there are any questions relating to this response or the application, it would be appreciated if the Examiner would telephone the undersigned attorney.

If necessary for a timely response, this paper should be considered as a petition for an Extension of Time and please charge any deficiency in fees or credit any overpayments to Deposit Account No. 13-2725 (Docket # 70206.0018FPWO).

Respectfully submitted,

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Melissa M. Hayworth
Registration No. 45,774

Merchant & Gould PC
225 Reinekers Lane
Suite 560
Alexandria, VA 22314
202.326.0300

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PATENT TRADEMARK OFFICE